

**SELECTIVE HYDROGENATION OF ALKYNES AND/OR DIOLEFINS****ABSTRACT**

A process for selectively removing alkynes and/or diolefins from a feedstock also containing olefins comprises contacting the feedstock with hydrogen in the presence of a catalyst composition. The catalyst composition comprises at least one metal component selected from Groups 8 to 10 of the Periodic Table of Elements impregnated on a support, wherein an organic nitrogen-containing compound is contacted with the support before, during or after the metal impregnation.